

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P580638

Luminaire Tested: **HVSL4-8-LD4-2HI-35-UNV-O-EDD**

Issue Date: 12/16/2022



**Test Information**

Test Method: LM-79-08  
Report Number: P580638  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-6)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/16/2022  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: HVSL4-8-LD4-2HI-35-UNV-O-EDD  
Description: 8 FOOT, 4INCH WIDE, HVSL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

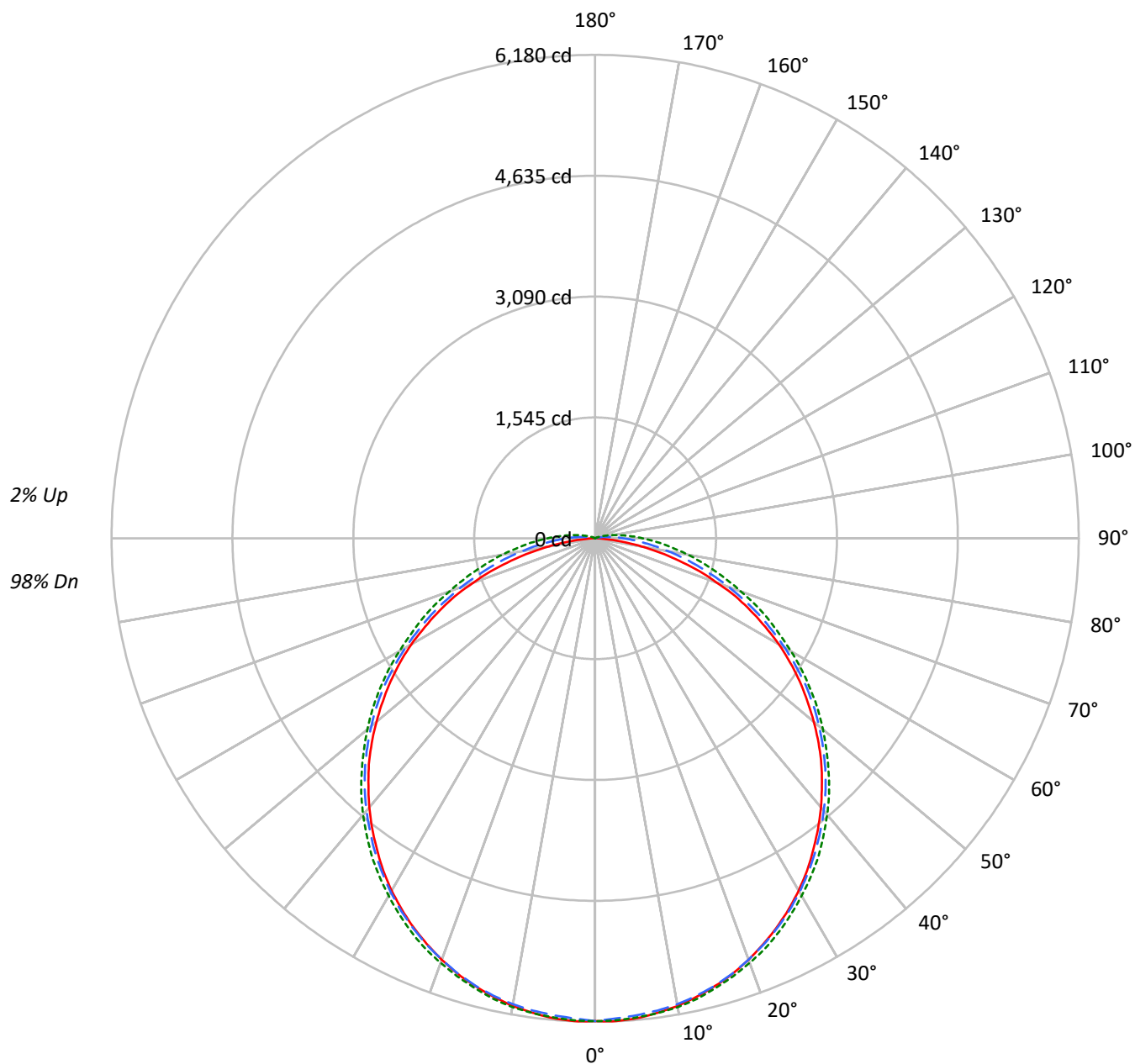
Lumens per Lamp: N/A  
Luminaire Lumens: 18663.0 lumens  
Efficiency: N/A  
Efficacy: 108.3 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 8' x H: 0.17')  
CIE Type: Direct

Input Watts (W): 172.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT

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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|
| RF  | 20  |     |     |     | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |    |    | 20 |
| RC  | 80  |     |     |     | 70  |     |     |     |     | 50  |     |     |     |     | 30  |     |     |    |    | 10 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50 | 30 | 10 |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 110 | 110 | 110 | 105 | 105 | 105 | 101 | 101 | 101 |    |    | 98 |
| 1   | 108 | 102 | 98  | 94  | 105 | 100 | 96  | 92  | 95  | 92  | 89  | 91  | 88  | 86  | 87  | 85  | 83  |    |    | 81 |
| 2   | 98  | 89  | 82  | 76  | 95  | 87  | 80  | 75  | 83  | 77  | 73  | 79  | 75  | 71  | 76  | 72  | 69  |    |    | 67 |
| 3   | 89  | 78  | 69  | 63  | 86  | 76  | 68  | 62  | 73  | 66  | 61  | 70  | 64  | 59  | 67  | 62  | 58  |    |    | 56 |
| 4   | 81  | 69  | 60  | 53  | 79  | 67  | 59  | 52  | 65  | 57  | 52  | 62  | 56  | 51  | 60  | 54  | 50  |    |    | 47 |
| 5   | 75  | 61  | 52  | 45  | 72  | 60  | 52  | 45  | 58  | 50  | 44  | 56  | 49  | 44  | 54  | 48  | 43  |    |    | 41 |
| 6   | 69  | 55  | 46  | 40  | 67  | 54  | 46  | 39  | 52  | 45  | 39  | 50  | 44  | 38  | 49  | 43  | 38  |    |    | 36 |
| 7   | 64  | 50  | 41  | 35  | 62  | 49  | 41  | 35  | 47  | 40  | 34  | 46  | 39  | 34  | 44  | 38  | 34  |    |    | 32 |
| 8   | 59  | 46  | 37  | 31  | 58  | 45  | 37  | 31  | 43  | 36  | 31  | 42  | 35  | 30  | 41  | 35  | 30  |    |    | 28 |
| 9   | 55  | 42  | 34  | 28  | 54  | 41  | 33  | 28  | 40  | 33  | 28  | 39  | 32  | 27  | 38  | 32  | 27  |    |    | 25 |
| 10  | 52  | 39  | 31  | 25  | 51  | 38  | 30  | 25  | 37  | 30  | 25  | 36  | 29  | 25  | 35  | 29  | 25  |    |    | 23 |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 24916 | 24916 | 24916 |
| 5°  | 24912 | 24024 | 23872 |
| 10° | 24791 | 23281 | 22926 |
| 15° | 24623 | 22514 | 21931 |
| 20° | 24441 | 21710 | 20988 |
| 25° | 24216 | 20906 | 20064 |
| 30° | 23951 | 20078 | 19093 |
| 35° | 23604 | 19204 | 18146 |
| 40° | 23247 | 18303 | 17121 |
| 45° | 22865 | 17349 | 16058 |
| 50° | 22353 | 16294 | 14955 |
| 55° | 21808 | 15165 | 13787 |
| 60° | 21156 | 13798 | 12501 |
| 65° | 20049 | 12314 | 11232 |
| 70° | 18420 | 10643 | 9838  |
| 75° | 16066 | 8868  | 8535  |
| 80° | 12463 | 7139  | 7292  |
| 85° | 7185  | 5419  | 6050  |



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**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 584.1   | 3.1       |
| 10°-20°   | 1675.5  | 9.0       |
| 20°-30°   | 2542.3  | 13.6      |
| 30°-40°   | 3074.1  | 16.5      |
| 40°-50°   | 3207.6  | 17.2      |
| 50°-60°   | 2932.7  | 15.7      |
| 60°-70°   | 2286.2  | 12.2      |
| 70°-80°   | 1430.1  | 7.7       |
| 80°-90°   | 649.5   | 3.5       |
| 90°-100°  | 217.7   | 1.2       |
| 100°-110° | 54.7    | 0.3       |
| 110°-120° | 8.6     | 0.0       |
| 120°-130° | 0.0     | 0.0       |
| 130°-140° | 0.0     | 0.0       |
| 140°-150° | 0.0     | 0.0       |
| 150°-160° | 0.0     | 0.0       |
| 160°-170° | 0.0     | 0.0       |
| 170°-180° | 0.0     | 0.0       |
| <hr/>     |         |           |
| 0°-30°    | 4801.9  | 25.7      |
| 0°-40°    | 7876.0  | 42.2      |
| 0°-60°    | 14016.2 | 75.1      |
| 0°-90°    | 18382.0 | 98.5      |
| 90°-120°  | 281.0   | 1.5       |
| 90°-150°  | 281.0   | 1.5       |
| 90°-180°  | 281.0   | 1.5       |
| 0°-180°   | 18663.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 6173 | 6173  | 6173 | 6173  | 6173 |      |
| 5°   | 6160 | 6148  | 6120 | 6149  | 6149 | 585  |
| 15°  | 5925 | 5935  | 5919 | 5953  | 5951 | 1673 |
| 25°  | 5490 | 5494  | 5500 | 5547  | 5556 | 2530 |
| 35°  | 4860 | 4882  | 4902 | 4952  | 4972 | 3042 |
| 45°  | 4089 | 4125  | 4159 | 4200  | 4220 | 3151 |
| 55°  | 3191 | 3229  | 3289 | 3337  | 3358 | 2851 |
| 65°  | 2193 | 2231  | 2308 | 2400  | 2437 | 2170 |
| 75°  | 1110 | 1179  | 1350 | 1512  | 1569 | 1184 |
| 85°  | 192  | 355   | 610  | 806   | 877  | 243  |
| 90°  | 2    | 132   | 359  | 540   | 605  | 8    |
| 95°  | 2    | 35    | 186  | 338   | 390  | 1    |
| 105° | 3    | 4     | 31   | 90    | 121  | 3    |
| 115° | 4    | 4     | 6    | 16    | 23   | 3    |
| 125° | 0    | 0     | 0    | 0     | 0    | 0    |
| 135° | 0    | 0     | 0    | 0     | 0    | 0    |
| 145° | 0    | 0     | 0    | 0     | 0    | 0    |
| 155° | 0    | 0     | 0    | 0     | 0    | 0    |
| 165° | 0    | 0     | 0    | 0     | 0    | 0    |
| 175° | 0    | 0     | 0    | 0     | 0    | 0    |
| 180° | 0    | 0     | 0    | 0     | 0    |      |



TEST NUMBER: P580638

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 6172.6 | 6172.6 | 6172.6 | 6172.6 | 6172.6 |
| 2.5°   | 6179.9 | 6171.1 | 6143.5 | 6171.1 | 6169.7 |
| 5°     | 6159.5 | 6147.9 | 6120.2 | 6149.3 | 6149.3 |
| 7.5°   | 6118.8 | 6114.4 | 6089.7 | 6123.1 | 6123.1 |
| 10°    | 6070.7 | 6069.3 | 6048.9 | 6085.3 | 6086.7 |
| 12.5°  | 6003.8 | 6009.6 | 5990.7 | 6025.6 | 6030.0 |
| 15°    | 5925.2 | 5935.4 | 5919.4 | 5952.9 | 5951.4 |
| 17.5°  | 5839.4 | 5845.2 | 5833.6 | 5871.4 | 5869.9 |
| 20°    | 5733.1 | 5740.4 | 5731.7 | 5771.0 | 5775.3 |
| 22.5°  | 5615.3 | 5625.5 | 5624.0 | 5664.8 | 5676.4 |
| 25°    | 5490.1 | 5494.5 | 5500.3 | 5546.9 | 5555.6 |
| 27.5°  | 5351.9 | 5359.2 | 5369.4 | 5411.6 | 5420.3 |
| 30°    | 5200.6 | 5212.2 | 5223.9 | 5267.5 | 5279.2 |
| 32.5°  | 5040.5 | 5052.2 | 5066.7 | 5123.5 | 5129.3 |
| 35°    | 4860.1 | 4881.9 | 4902.3 | 4951.8 | 4972.1 |
| 37.5°  | 4679.6 | 4707.3 | 4726.2 | 4778.6 | 4794.6 |
| 40°    | 4489.0 | 4516.7 | 4547.2 | 4602.5 | 4612.7 |
| 42.5°  | 4289.7 | 4321.7 | 4358.1 | 4407.5 | 4425.0 |
| 45°    | 4088.9 | 4125.2 | 4158.7 | 4199.5 | 4219.8 |
| 47.5°  | 3872.1 | 3908.4 | 3949.2 | 3995.7 | 4008.8 |
| 50°    | 3648.0 | 3690.2 | 3733.8 | 3777.5 | 3800.8 |
| 52.5°  | 3418.1 | 3469.0 | 3518.5 | 3565.0 | 3586.9 |
| 55°    | 3191.1 | 3228.9 | 3288.6 | 3336.6 | 3358.4 |
| 57.5°  | 2955.3 | 2987.3 | 3041.2 | 3119.8 | 3131.4 |
| 60°    | 2715.2 | 2744.3 | 2799.6 | 2863.7 | 2889.9 |
| 62.5°  | 2450.4 | 2489.7 | 2547.9 | 2629.4 | 2652.7 |
| 65°    | 2192.9 | 2230.7 | 2307.8 | 2399.5 | 2437.3 |
| 67.5°  | 1944.0 | 1957.1 | 2056.1 | 2152.1 | 2213.2 |
| 70°    | 1650.1 | 1699.6 | 1814.5 | 1932.4 | 1979.0 |
| 72.5°  | 1396.9 | 1446.4 | 1573.0 | 1711.2 | 1769.4 |
| 75°    | 1110.3 | 1178.6 | 1350.3 | 1511.9 | 1568.6 |
| 77.5°  | 858.5  | 934.2  | 1146.6 | 1309.6 | 1375.1 |
| 80°    | 599.5  | 717.4  | 948.7  | 1132.1 | 1203.4 |
| 82.5°  | 376.9  | 522.4  | 769.8  | 961.8  | 1024.4 |
| 85°    | 192.1  | 355.0  | 609.7  | 806.1  | 877.4  |
| 87.5°  | 50.9   | 229.9  | 474.4  | 662.1  | 734.8  |
| 90°    | 1.5    | 132.4  | 359.4  | 539.8  | 605.3  |
| 92.5°  | 1.5    | 74.2   | 267.7  | 429.3  | 496.2  |
| 95°    | 1.5    | 34.9   | 186.3  | 337.6  | 390.0  |
| 97.5°  | 1.5    | 14.6   | 128.1  | 254.6  | 307.0  |
| 100°   | 1.5    | 7.3    | 81.5   | 184.8  | 229.9  |
| 102.5° | 2.9    | 4.4    | 50.9   | 132.4  | 168.8  |
| 105°   | 2.9    | 4.4    | 30.6   | 90.2   | 120.8  |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90°  |
|--------|-----|-------|-----|-------|------|
| 112.5° | 4.4 | 4.4   | 5.8 | 24.7  | 36.4 |
| 115°   | 4.4 | 4.4   | 5.8 | 16.0  | 23.3 |
| 117.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 120°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 122.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 125°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 127.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 130°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 132.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 135°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 137.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 140°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 142.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 145°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 147.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 150°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 152.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 155°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 157.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 160°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 162.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 165°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 167.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 170°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 172.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 175°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 177.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 180°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |



Report Generated By 670246072 / DESKTOP-MV3F9LC





— 0°-180°    - - 45°-225°    - - - 90°-270°







|        |     |     |      |      |      |
|--------|-----|-----|------|------|------|
| 107.5° | 2.9 | 4.4 | 17.5 | 61.1 | 82.9 |
| 110°   | 4.4 | 4.4 | 10.2 | 37.8 | 55.3 |



(END OF REPORT)